

Travis A. O'Brien
Curriculum Vitae

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Objective: *To obtain a permanent research and/or teaching position in the Earth Sciences in an intellectually stimulating environment.*

Education:

University of California, Santa Cruz	Ph. D. Earth Science 2008-2011
	Dissertation: <i>The Recent Past and Possible Future Decline of California Coastal Fog</i>
	Advisors: Professor Lisa C. Sloan Professor Patrick Y. Chuang
University of California, Santa Cruz	M. S. Earth Science 2006-2008
	Thesis: <i>How Did Airborne Dust Affect North American Climate During the 1930's Dust Bowl?</i>
	Advisor: Professor Lisa C. Sloan
University of California, Santa Cruz	B. S. Physics 2001-2005
	Thesis: <i>Anisotropic Local Distortion of $La_{1.2}Sr_{1.8}Mn_2O_7$ Through the Ferromagnetic Transition Temperature</i>
	Advisor: Professor Frank Bridges

Positions Held:

2011-present	Geological Postdoctoral Fellow, Lawrence Berkeley National Lab. Advisor: Professor William D. Collins
2010	Associate in Atmospheric Sciences, UC Davis
2009-2011	Ph.D Candidate, UC Santa Cruz
2006-2009	Graduate Student Researcher, UC Santa Cruz
2006	Research Consultant, Los Alamos National Laboratory
2004-2005	Research Assistant, UC Santa Cruz
2004	Student Intern, Stanford Linear Accelerator

Refereed Publications:

O'Brien, T. A., Sloan, L. C., Chuang, P. Y., Faloona, I. C., Multidecadal simulation of coastal fog with a regional climate model. *Clim. Dyn.*, 2012 (*In Press*)

Giorgi, F., Coppola, E., Solmon, F., Mariotti, L., Sylla, M., Bi, X., Elguindi, N., Diro, G. T., Nair, V., Giuliani, G., Cozzini, S., Guettler, I., **O'Brien, T. A.**, Tawfik, A., Shalaby, A., Zakey, A. S., Steiner, A., Stordal, F., Sloan, L., Brankovic, C. RegCM4: model description and preliminary tests over multiple CORDEX domains. *Clim. Res.*, 52, 7 (2012).

O'Brien, T. A., Chuang, P. Y., Sloan, L. C., Faloona, I. C., Rossiter, D. L., Coupling a new turbulence parametrization to RegCM adds realistic stratocumulus clouds. *Geosci. Model Dev.*, 5, 989-1008, doi:10.5194/gmd-5-989-2012, (2012)

O'Brien, T. A., Sloan, L. C., Snyder, M. A. Can ensembles of regional climate model simulations improve results from sensitivity studies? *Clim. Dyn.*, 37, 1111 (2011).

Bridges, F., Downs, C., **O'Brien, T.**, Jeong, Il-K, and Kimura, T. Limitations on the extent of off-center displacements in TbMnO₃ from EXAFS measurements. *Phys. Rev. B*, 76, 092109 (2007).

O'Brien, T. A., Bridges, F., Downward, L., Mitchell, J. F., Zheng, H., Evidence for magnetic “dimerons” in the anisotropic bilayer system La_{1.2}Sr_{1.8}Mn₂O₇: an EXAFS study. *Phys. Rev. B*, 75, 064417 (2007).

Invited Talks:

O'Brien, T. A., Sloan, L. C., Chuang, P. Y., Faloona, I. C., Changes in California Coastal Dynamics over the Last 100 Years. *ICTP RegCM Workshop*, 2012, Abstracts unavailable.

O'Brien, T. A., Sloan, L. C., Chuang, P. Y., and Faloona, I. C., What has caused the long-term decline in California coastal fog? *UC Davis Atmospheric Sciences Seminar*, 2 May, 2011. Abstract not available.

5 Recent Public Presentations:

O'Brien, T. A., Sloan, L. C., Chuang, P. Y., Faloona, I. C., Collins, W. D., Simulating the Recent Decline in Coastal Fog. *California Climate Change & Water Symposium*, 2012, Abstracts unavailable.

O'Brien, T. A., Collins, W. D., Li, F., Observational constraints on scale-awareness: Illumination of a scale-incognizant stratiform parameterization in CAM. *BASC Symposium*, 2012, Abstracts not available.

O'Brien, T. A., Sloan, L. C., Chuang, P. Y., Faloona, I. C., Simulating Coastal Fog with a Regional Climate Model. *AGU Fall Meeting*, 2011, A31K-05, Abstracts online.

O'Brien, T. A., Sloan, L. C., Chuang, P. Y., Faloona, I. C., Regional Simulation of Marine Stratus and Fog. *UC Davis Symposium on Sea and Coast*, 14 September, 2010, Abstracts not available.

O'Brien, T. A., Sloan, L. C., Chuang, P. Y., Faloona, I. C., Does a new boundary layer model improve simulation of coastal environments in RegCM3? *ICTP RegCM Workshop*, 2010, Abstracts unavailable.

Other Public Presentations:

Güttler, I. and **O'Brien, T. A.**, Coupling with the UW PBL Scheme. *ICTP RegCM Workshop, 2012*, Abstracts unavailable

Snyder, M. A. and **O'Brien, T. A.**, Regional climate model ensemble techniques: Towards higher spatial resolution probabilistic climate scenarios. *AGU Fall Meeting, 2010*, GC42A-05, Abstracts online.

Sloan, L. C., Graves, D., Snyder, M. A., and **O'Brien, T. A.** (2010) Climate Change and Wine: Observations, Impacts, and Implications. *Seymour Center Lecture Series, 19 September, 2010*, Abstracts not available.

O'Brien, T. A., Sloan, L. C., Snyder, M. A., Can ensembles of regional climate model simulations improve results from sensitivity studies? *BASC Symposium, 2010*, Abstracts not available.

O'Brien, T. A., Hutchison, K. H., Sloan, L. C., Solmon, F., Application of ICTP RegCM3's New Dust Model to Modern N. America: Challenges and Questions. *AGU Fall Meeting 2008*, GC53A-0688, Abstracts Online.

Hutchison, K. H., **O'Brien, T. A.**, Sloan, L. C., The Regional Impact of Current and Future Dust Levels on Climate in Western North America. *AGU Fall Meeting 2008*, GC53A-0693, Abstracts Online.

Snyder, M. A., **O'Brien, T. A.**, Sloan, L. C., Future Changes in Surface Winds in the Western U.S. due to Climate Change. *AGU Fall Meeting 2008*, GC53B-0721, Abstracts Online.

O'Brien, T. A., Solmon, F., Sloan, L. C., Snyder, M. A., Airborne Dust Modified the North American Climate During the 1930's Dust Bowl. *AGU Joint Assembly 2007*, A52A-03, Abstracts with Programs.

O'Brien, T. A., Downward, L. M., Larson, D., Downs, C., Bridges, F., Mitchell, J. F., Zheng, H., Evidence for Magnetic Dimerons in the Anisotropic Bilayer System La_{1.2}Sr_{1.8}Mn₂O₇: an EXAFS study. *SSRL Users' Meeting 2005*, Poster Session, Abstracts with Programs.

O'Brien, T. A., Downward, L. M., Larson, D., Downs, C., Bridges, F., Mitchell, J. F., Zheng, H., Anisotropic Local Distortion of La_{1.2}Sr_{1.8}Mn₂O₇ Through the Ferromagnetic Transition Temperature. *Bull. Am. Phys. Soc. March Meeting 2005*, N43.00003, Abstracts online.

O'Brien, T. A., Downward, L. M., Larson, D., Downs, C., Bridges, F., Mitchell, J. F., Zheng, H., Anisotropic Local Distortion of La_{1.2}Sr_{1.8}Mn₂O₇ Through the Ferromagnetic Transition Temperature. *SSRL Users' Meeting 2004*, Poster Session, Abstracts with Programs.

Selected Synergistic Activities:

- Weekly seminar co-organizer, LBNL Climate Department
- Session co-convener, AGU Fall Meeting, 2012. A025: Coastal Fog: Atmosphere, Biosphere, Ocean, and Land Interactions
- Session co-convener, AGU Fall Meeting, 2012. A066: Scale Dependence, Scale Invariance, and Scale Aware Parameterization
- Participant and Lab Instructor, ICTP RegCM Workshop and Tutorial, 2010 and 2012
- Session co-convener, AGU Fall Meeting, 2010. GC15: Coastal Climates in a Changing World
- Session co-convener, AGU Fall Meeting, 2009. IN11D: Management and Dissemination of Earth and Space Science Models
- Associate (volunteer) developer, ICTP RegCM
- Participant, 2007 and 2008 Climate Leadership Summit, Santa Cruz, CA

Teaching Experience:

Teaching Assistant	Earth Sciences 110B	Earth as a Chemical System	UCSC	Winter 2011
Associate in Atmospheric Sciences	Atmospheric Sciences 120	Atmospheric Thermodynamics and Cloud Physics	UCD	Fall 2010
Teaching Assistant	Earth Sciences 80C	Introduction to Weather and Climate	UCSC	Fall 2009
Teaching Assistant	Earth Sciences 110B	Earth as a Chemical System	UCSC	Winter 2009
Teaching Assistant	Earth Sciences 10	California Geology	UCSC	Fall 2007
Teaching Assistant	Earth Sciences 80D	Earth Sciences in the Cinema	UCSC	Spring 2007

Current and Past Support:

06/12	NASA-ROSES PMM 2012, <i>Under Review</i>	Investigation into the use of TRMM and GPM data to constrain and develop scale-aware model parameterizations to improve model simulations of extreme precipitation
05/11	NSF AGS Postdoctoral Fellowship, <i>Unfunded</i>	AGS-PRF: Developing and Applying a Model of Coastal Fog During the Last Glacial Maximum
09/08 - 09/10	UCSC STEPS Institute, \$1,000	A New Model for the Future of Fog on California's Coast
04/07 - 04/08	UCSC STEPS Institute, \$1,500	A Neural Network Model of Agricultural Response to Local Climate
03/07	UCSC CDELSI Institute, \$300	Travel grant to present at AGU Joint Meeting, 2007